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DISEASE NOTES

First Report of Grapevine Virus E and Grapevine Virus F in Grapevine in Greece

P. Panailidou, L. Lotos, A. Olmos, A. B. Ruiz-Garcia, F. Moran, C. G. Orfanidou, C.-L. Sasselou, N. I. Katis, and V. I. Maliogka

Affiliations

Authors and Affiliations

P. Panailidou¹

L. Lotos¹

A. Olmos²

A. B. Ruiz-Garcia²

F. Moran²

C. G. Orfanidou¹

C.-L. Sasselou¹

N. I. Katis¹

V. I. Maliogka¹ †

¹Laboratory of Plant Pathology, School of Agriculture, Faculty of Agriculture, Forestry and Natural Environment, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece

²Instituto Valenciano de Investigaciones Agrarias, 46113 Moncada, Valencia, Spain

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Grapevine virus E (GVE) and *Grapevine virus F* (GVF) are members of the genus *Vitivirus* (family *Betaflexiviridae*) (Al Rwahnih et al. 2012; Nakaune et al. 2008) with a worldwide distribution. Even though grapevine viruses A and B, two other vitiviruses, are prevalent in Greek vineyards, no other member of the genus *Vitivirus* has been reported in Greece so far. In 2017, during a study of the virome of Greek grapevines, one sample (D2.1) from cultivar Dafnia (Institute of Grapevine, Likovrisi, Attiki) was subjected to high-throughput sequencing of total RNA extracted from phloem scrapings using a Plant/Fungi Total RNA Purification Kit (Norgen Biotek Corporation, Canada) on an Illumina NextSeq platform (Lifesequencing, S.L., Spain). The run yielded ~51 million 150-bp paired-end reads. De novo assembly of these reads and subsequent BLAST (n/x) analysis of the produced contigs revealed sequences of GVE and GVF, among others. Almost complete genomes from both viruses were reconstructed with 71 to 98% and 86 to 89% nucleotide sequence identities to GVE and GVF isolates for which sequences are deposited in databases, respectively. The reconstructed genomes were deposited in GenBank with accession numbers MK490829 for GVE (isolate D2-1/8) and MK490830 and MK490831 for GVF (two different GVF variants coinfecting D2.1, namely D2-1/9, D2-1/13). To confirm the presence of these two viruses in the D2.1 sample, two sets of primers (GVEup [5'-ATGGAGTCAAAGCGATCMG-3'] and GVEdo [5'-ACCTGTGACTGAGCATCAAATAC-3']; and GVF_F_4521

[5'-TGTGTGGGCKAARACATA TG-3'] and GVF_R_ 5190 [5'-ATCAGAAAAGATGCTMCTCACCT-3'']) were used to amplify a 574 and a 670-bp fragments from the coat protein and polymerase gene of GVE and GVF, respectively. Sanger sequencing of the amplicons confirmed the presence of both viruses in the analyzed sample. Seventy additional samples from the Institute's collection were screened for the presence of GVE and GVF, and the viruses were identified in five and 12 vines, respectively. To our knowledge, this is the first report of GVE and GVF in grapevine in Greece.

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The American Phytopathological Society (APS)

📍 3340 Pilot Knob Road, St. Paul, MN 55121 USA

☎ +1.651.454.7250

FAX +1.651.454.0766



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